

§ 56.25–5

(b) Pipe for bypasses should be at least Schedule 80 seamless, and of a material of the same nominal chemical composition and physical properties as that used for the main line. Lesser thickness may be approved depending on the installation and service conditions.

(c) Bypasses may be integral or attached.

[CGFR 68–82, 33 FR 18843, Dec. 18, 1968, as amended by USCG–2003–16630, 73 FR 65176, Oct. 31, 2008]

Subpart 56.25—Pipe Flanges, Blanks, Flange Facings, Gaskets, and Bolting

§ 56.25–5 Flanges.

Each flange must conform to the design requirements of either the applicable standards of table 56.60–1(b) of this part, or of those of appendix 2 of section VIII of the ASME Boiler and Pressure Vessel Code (incorporated by reference; see 46 CFR 56.01–2). Plate flanges must meet the requirements of § 56.30–10(b)(5) of this part and the material requirements of § 56.60–1(a) of this part. Flanges may be integral or may be attached to pipe by threading, welding, brazing, or other means within the applicable standards specified in table 56.60–1(b) of this part and the requirements of this subpart. For flange facing gasket combinations other than those specified above, calculations must be submitted indicating that the gaskets will not result in a higher bolt loading or flange moment than for the acceptable configurations.

[CGD 77–140, 54 FR 40605, Oct. 2, 1989, as amended by USCG–2002–13058, 67 FR 61278, Sept. 30, 2002; USCG–2003–16630, 73 FR 65176, Oct. 31, 2008]

§ 56.25–7 Blanks.

Each blank must conform to the design requirements of 104.5.3 of ASME B31.1 (incorporated by reference; see 46 CFR 56.01–2).

[USCG–2003–16630, 73 FR 65176, Oct. 31, 2008]

§ 56.25–10 Flange facings.

(a) Flange facings shall be in accordance with the applicable standards listed in table 56.60–1(b) and MSS SP–6 (in-

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corporated by reference; see 46 CFR 56.01–2).

(b) When bolting class 150 standard steel flanges to flat face cast iron flanges, the steel flange must be furnished with a flat face, and bolting must be in accordance with § 56.25–20 of this part. Class 300 raised face steel flanges may be bolted to class 250 raised face cast iron flanges with bolting in accordance with § 56.25–20(b) of this part.

[CGFR 68–82, 33 FR 18843, Dec. 18, 1968, as amended by CGD 77–140, 54 FR 40605, Oct. 2, 1989; USCG–2003–16630, 73 FR 65176, Oct. 31, 2008]

§ 56.25–15 Gaskets (modifies 108.4).

(a) Gaskets shall be made of materials which are not injuriously affected by the fluid or by temperature.

(b) Each gasket must conform to the design requirements of the applicable standards of table 56.60–1(b) of this part.

(c) Only metallic and suitable asbestos-free nonmetallic gaskets may be used on flat or raised face flanges if the expected normal operating pressure exceeds 720 pounds per square inch or the operating temperature exceeds 750 °F.

(d) The use of metal and nonmetallic gaskets is not limited as to pressure provided the gasket materials are suitable for the maximum fluid temperatures.

[CGFR 68–82, 33 FR 18843, Dec. 18, 1968, as amended by CGD 86–035, 54 FR 36316, Sept. 1, 1989; USCG–2003–16630, 73 FR 65176, Oct. 31, 2008]

§ 56.25–20 Bolting.

(a) *General.* (1) Bolts, studs, nuts, and washers must comply with applicable standards and specifications listed in 46 CFR 56.60–1. Unless otherwise specified, bolting must be in accordance with ASME B16.5 (incorporated by reference; see 46 CFR 56.01–2).

(2) Bolts and studs must extend completely through the nuts.

(3) See § 58.30–15(c) of this chapter for exceptions on bolting used in fluid power and control systems.

(b) Carbon steel bolts or bolt studs may be used if expected normal operating pressure does not exceed 300 pounds per square inch gauge and the

expected normal operating temperature does not exceed 400 °F. Carbon steel bolts must have heavy hexagon heads in accordance with ASME B18.2.1 (incorporated by reference, see 46 CFR 56.01-2) and must have heavy semi-finished hexagonal nuts in accordance with ASME/ANSI B18.2.2 (incorporated by reference, see 46 CFR 56.01-2), unless the bolts are tightly fitted to the holes and flange stress calculations taking the bolt bending stresses into account are submitted. When class 250 cast iron flanges are used or when class 125 cast iron flanges are used with ring gaskets, the bolting material must be carbon steel conforming to ASTM A 307 (incorporated by reference, see 46 CFR 56.01-2), Grade B.

(c) Alloy steel stud bolts must be threaded full length or, if desired, may have reduced shanks of a diameter not less than that at the root of the threads. They must have heavy semi-finished hexagonal nuts in accordance with ANSI B18.2.2.

(d) All alloy bolts or studs and accompanying nuts are to be threaded in accordance with ANSI/ASME B1.1 (incorporated by reference; see 46 CFR 56.01-2), Class 2A external threads, and Class 2B internal threads (8-thread series 8UN for one inch and larger).

(e) (*Reproduces 108.5.1*) Washers, when used under nuts, shall be of forged or rolled material with steel washers being used under steel nuts and bronze washers under bronze nuts.

[CGFR 68-82, 33 FR 18843, Dec.18, 1968, as amended by CGD 77-140, 54 FR 40605, Oct. 2, 1989; USCG-2000-7790, 65 FR 58460, Sept. 29, 2000; USCG-2003-16630, 73 FR 65176, Oct. 31, 2008]

Subpart 56.30—Selection and Limitations of Piping Joints

§ 56.30-1 Scope (replaces 110 through 118).

The selection and limitation of piping joints must be as required by this subpart rather than as required by 110 through 118 of ASME B31.1 (incorporated by reference; see 46 CFR 56.01-2); however, certain requirements are marked “reproduced” in this subpart.

[USCG-2003-16630, 73 FR 65177, Oct. 31, 2008]

§ 56.30-3 Piping joints (reproduces 110).

The type of piping joint used shall be suitable for the design conditions and shall be selected with consideration of joint tightness, mechanical strength and the nature of the fluid handled.

§ 56.30-5 Welded joints.

(a) *General.* Welded joints may be used for materials for which welding procedures, welders, and welding machine operators have been qualified in accordance with part 57 of this subchapter.

(b) *Butt welds—general.* Butt welds may be made with or without backing or insert rings within the limitations established in § 56.70-15. When the use of backing rings will result in undesirable conditions such as severe stress concentrations, corrosion or erosion, then:

(1) The backing rings shall be removed and the inside of the joint ground smooth, or

(2) The joint shall be welded without backing rings, or

(3) Consumable insert rings must be used. Commonly used types of butt welding end preparations are shown in ASME B16.25 (incorporated by reference; see 46 CFR 56.01-2).

(4) Restrictions as to the use of backing rings appear for the low temperature piping systems and should be checked when designing for these systems.

(c) *Socket welds (Modifies 127.3.3A.).*

(1) Each socket weld must conform to ASME B16.11 (incorporated by reference; see 46 CFR 56.01-2), to applicable standards listed in 46 CFR 56.60-1, table 56.60-1(b), and to Figure 127.4.4C in ASME B31.1 (incorporated by reference; see 46 CFR 56.01-2) as modified by § 56.30-10(b)(4) of this part. A gap of approximately one-sixteenth inch between the end of the pipe and the bottom of the socket must be provided before welding. This may best be provided by bottoming the pipe and backing off slightly before tacking.

(2) Socket welds must not be used where severe erosion or crevice corrosion is expected to occur. Restrictions on the use of socket welds appear in § 56.70-15(d)(3) of this part for Class I service and in § 56.50-105 of this part for